

Re: FCC ID BCR-MRB-PCS
Applicant: Allen Telecom Systems
Correspondence Reference Number: 10323
731 Confirmation Number: EA95128
Date of Original E-Mail: 10/24/1999

FCC questions are shown in italics; Allen Telecom/KTL responses are shown in bold.

The equipment manual for this amplifier indicates that multichannel operation is intended but you did not submit 3 channel intermodulation (IM) measurement data.

KTL to respond here. Please reference F. Coperich Email.

We are unclear as to the number of channels per module and how they affect the total RF output power and the RF output power per channel. We will use this information to complete the grant.

The RF Booster is a broadband system which is used to boost the downlink power for a BTS or repeater. The booster uses multiple power amplifiers in parallel to perform multi-carrier amplification of all of the RF channels in the downlink of the donor system. There are two power options for the booster – high power uses four amplifiers in parallel and low power uses only two. The booster's downlink input signal is split either four or two ways with a broadband hybrid, amplified by either four or two identical broadband amplifiers, then power combined in a second hybrid prior to duplexer filtering and radiation. The booster itself contains no channelization or filtering. Identical amplifiers are paralleled simply to allow a modular design and to distribute the heat for improved thermal performance. In all cases, the number of channels is determined by the donor system. The booster will simply amplify the composite downlink signal and radiate it to the coverage area.

The power amplifiers are limited by the spurious output that they produce given the peak power of the composite input signal. The allowable power per carrier must, therefore, decrease as the number of RF carriers from the donor system increases. It is also dependent on the modulation format of the donor system since certain modulation types have a higher peak-to-average ratio than others. Tables 2 and 3 illustrate the allowable output power per carrier for up to eight carriers for the ADB block and EFC block versions of the booster.

We are unclear as to the intended uses for the amplifier especially with respect to number of channels for each emission and the use of the amplifier as a booster, repeater, and extender. We will also use this information to complete the grant

The booster is designed to hardwire to the donor BTS or repeater and provide high-power amplification and radiation of the broadband downlink signal. Duplexers at the booster antenna port route the uplink signal to an LNA whose output, after filtering, is always hardwired to the donor equipment. The booster is not designed or specified to radiate any uplink energy.

The booster power options include either high or low power capability, which is determined simply by the overall power amplifier capacity (either two or four power amplifiers operating in parallel). The amplifiers will provide multi-carrier amplification of all RF channels over the downlink band.

A second set of options involve the PCS blocks over which the device can operate. These blocks are determined only by the frequency response of the booster's duplexers. The current options include one for blocks ADB and another for EFC. Again, this simply means that the booster will provide gain for donor hardware operating in one of the applicable frequency blocks.